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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,683	06/20/2001	Mitchell Simmons Cohen	ROC920000148US1	6372

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EXAMINER

BELLO, AGUSTIN

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/885,683

Applicant(s)

COHEN ET AL.

Examiner

Agustin Bello

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— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 3 recites the limitation "said optical path" in line 3. There is insufficient antecedent basis for this limitation in the claim.
4. Claim 11 recites the limitation "said grease" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Imakawa (U.S. Patent No. 5,671,077).

Regarding claims 1 and 12, Imakawa teaches a transceiver optical subassembly comprising: a printed circuit board (reference numeral 11 in Figure 7) having a plurality of electrical connection points thereon; a lead frame (reference numeral 12 in Figure 15 and reference numeral 13 in Figure 17b) comprising a plurality of electrical leads connected to said

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connection points (as seen by protruding leads from board 11 in Figure 7); a solid-state laser (reference numeral 12 in Figure 7); a first photo-detector (reference numeral 16 in Figure 7); said laser and said first photo-detector each connected to selected ones of said plurality of electrical leads (inherent); and said lead frame, said laser and said first photo-detector enclosed by a cover member (reference numeral 19 in Figure 10), said cover member further comprising a partially reflective/partially transmissive inclined planar surface (reference numeral 20 in Figure 7) disposed in a path of emitted light from said laser and a partially cylindrical surface (reference numeral 23 in Figure 37A) disposed in a path of light emanating from said planar surface, focusing and reflecting said reflected light onto a photo-sensitive surface of said first photodetector (reference numeral 13A in Figure 37A), whereby electrical signals supplied to said laser through said electrical leads control the lasing of said laser (column 8 lines 65-67) and said emitted laser light is divided with a first beam projecting outwardly from said cover member and a second beam of said laser light deflected and focused onto said first photo-sensitive surface (as seen in Figure 7), providing an electronic representation of optical signals created by said laser (column 9 lines 15-21).

Regarding claim 2, Imakawa teaches the transceiver optical subassembly of claim 1 further comprising a second photo-detector (reference numeral 17 in Figure 7) disposed adjacent said inclined planar surface (reference numeral 20 in Figure 7) with an unobstructed (e.g. not blocked) optical path parallel to said light optical path of said light passed through said planar surface.

Regarding claims 3 and 14, Imakawa teaches the transceiver optical subassembly of claim 2 further comprising a pair of lenses (reference numeral 83, 84 in Figure 41) disposed in and aligned with said light path of said light passed thru said planar surface.

Regarding claim 4, Imakawa teaches the transceiver optical subassembly of claim 3 further comprising a transparent glass member (reference numeral 29 in Figure 7) disposed intermediate said inclined partially transmitting/partially reflecting surface and said lenses, said transparent glass member substantially perpendicular to a central ray of said light exiting said inclined surface.

Regarding claim 13, Imakawa teaches the transceiver optical subassembly of claim 12 wherein said plane surface (reference numeral 20 in Figure 7) is disposed at an angle which is either acute or obtuse to the axis of said laser beam (as seen in Figure 7).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5-11, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imakawa.

Regarding claims 5 and 15, Imakawa teaches the transceiver optical subassembly of claim 3 further comprising a cover (structure indicated by reference numeral 19, 30 in Figure 7) enclosing a transparent member (reference numeral 29 in Figure 7) having surfaces, said surfaces

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perpendicular to a central ray of said light exiting said inclined surface. Imakawa differs from the claimed invention in that Imakawa fails to specifically teach that the transparent member has a pair of parallel surfaces. However, transparent members with parallel surfaces are very well known in the art. One skilled in the art would clearly have recognized that it would have been possible to use a transparent member with a pair of parallel surface without departing from the scope or spirit of the invention of Imakawa. One skilled in the art would have been motivated to use a transparent member with a pair of parallel surfaces in order to reduce the overall protrusion length of the module (e.g. a flat lens will protrude less in space than the partially curved lens of Imakawa). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use a transparent member with a pair of parallel surfaces in the device of Imakawa without departing from the scope or spirit of the invention.

Regarding claim 6, Imakawa teaches a subassembly (reference numeral 19 in Figure 11) disposed over and enclosing said laser, said photo-detectors, said partially transmissive planar surface, said cylindrical surface and said glass, but differs from the claimed invention in that Imakawa fails to specifically teach that the subassembly is optically transparent. However, one skilled in the art would clearly have recognized that it would have been possible to use an optically transparent subassembly. One skilled in the art would have been motivated to use an optically transparent subassembly in order to allow the subassembly to couple light. Therefore, it would have been obvious to one skilled in the art at the time the invention was made use an optically transparent subassembly in the device of Imakawa.

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Regarding claim 7, Imakawa teaches an optical subassembly (inherent in that some element must hold lenses 83, 84 in Figure 41 in place) incorporating said pair of lenses in a fixed position relative to said laser and said second photo-detector.

Regarding claims 8 and 16, Imakawa teaches at least one alignment member (reference numeral 32 in Figure 10) compatibly positioned to engage a mating plug (reference numeral 18 in Figure 10), whereby said lenses may be aligned with optical elements of said plug (inherent in that optical assembly and lenses 83, 84 are aligned).

Regarding claims 9 and 17, Imakawa teaches that at least one alignment member comprises a pair of pins disposed within and extending from said optical subassembly (e.g. pair of screws extend within and extend from the optical subassembly).

Regarding claims 10 and 18, Imakawa teaches transceiver optical subassembly is assembled and sealed into a unitary structure (as seen in Figure 7).

Regarding claim 11, Imakawa differs from the claimed invention in that Imakawa fails to specifically teach transparent fluid having an index of refraction substantially equal to said indexes of refraction of materials of which said light-transmissive inclined planar member and said transparent section are fabricated, said grease disposed intermediate said inclined planar surface and said transparent section. However, transparent fluids such as epoxy-resins are very well known in the art. One skilled in the art would have been motivated to use this type of transparent fluid in order to seal the environment around the optical elements without refraction losses. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use a transparent fluid in the system of Imakawa.

Conclusion


9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Carpentier and Stuart teach relevant art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (703)308-1393. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703)305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AB


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